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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/728,047

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EXAMINER

NGUYEN, HAU H

ART UNIT

PAPER NUMBER

2628

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/728,047	Applicant(s) MORETON ET AL.	
	Examiner Hau H. Nguyen	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 2,8-15,17-19,21 and 27-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,16,20,22-26 and 33-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments filed February 24, 2006 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-7, 16, 20, 22-26, 33-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krech, Jr. (US Patent No. 6,057,852 hereinafter "Krech").

Krech teaches graphics system (Figs. 1-4) to perform a method for generating a primitive extension, the primitive extension defining the connectivity and vertices used to specify a collection of connected primitives within a generalized primitive (Figs. 5A – 5G and cols. 9 and 10, Table I) comprising providing vertices of an originating primitive (V1, V2, and V3, Fig. 5F); retrieving parameters associated with the generalized primitive, the parameters include a width (w), a step size (s) and an anchor width (a). This is described with reference to Fig. 5F which teaches, *when drawing a triangle strip primitive configuration, after the first three vertices are drawn to define the first triangle* (thus, indicating setting the vertices of the originating primitive as the first w vertices (in this case w=3)), *each subsequent triangle is defined by the addition of a single vertex* (in this case, setting the step size s =1). *For example, vertices 0, 1 and 2 define the first triangle of the triangle strip configuration* (providing vertices of the originating primitive).

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Vertex 3, then defines the second triangle of the primitive--that triangle being the triangle defined by vertices 1, 2 and 3 (col. 10, lines 52-60). Since this is the spanning of a triangle strip, the anchor width in this case, a is set equal to 0, and since the primitive extension is dependent upon the primitive types as shown in Table 1, col. 9 and 10 (triangle fan, triangle strip, quad mesh, etc.), the retrieved parameters (i.e. w , s , a) are based on the primitive extension types (the newly added vertexes of Fig. 5F is different from those of Fig. 5G, in which the anchor width $a=1$). Therefore, for at least the above reasons, claim 1 would have been obvious by Krech.

In regard to claim 3, as cited above with reference to Figs. 5A-G, Krech teaches the primitive extension including a triangle fan type (Fig. 5C), a quadrilateral strip type (Fig. 5D). Although Krech does not teach a cube strip type, it would have been obvious to one skilled in the art to modify the geometry model as taught by Krech such that the primitive extension type is a cube strip since the method of adding new vertices as taught by Krech can also apply to cube strip.

In regard to claim 4, as cited above, Krech teaches the parameters for the triangle fan is $w=3$ (3 original vertices of the first triangle), $s=1$ (each new triangle is formed by 1 new vertex), $a=1$ (1 anchor vertex for the fan), although not explicitly stated, the extension of the quadrilateral strip or the cube strip is in the same manner, i.e. for quadrilateral strip, 4 original vertices are provided ($w=4$), 2 additional new vertices are provided to form a new quadrilateral, reusing 2 previous adjacent vertices ($s=2$), and $a=0$ since there is no anchor vertex; for cube strip, 8 vertices are given ($w=8$); additional 4 vertices provided to form a new cube ($s=4$), and no anchor vertex ($a=0$).

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As per claim 5, Krech teaches one of the parameters (step size s) indicates a number of new vertices to be added to form a primitive adjacent to the originating primitive (see Table I, such as, n vertices-draws a triangle after the first three vertices then another triangle for each additional vertex ... for fan-type triangle).

As per claim 6, Krech teaches one of the parameters indicates a number of the vertices to be added to form a connected primitive adjacent to the originating primitive to be used as anchor vertices for each adjacent primitive (anchor vertex a as in the case of a triangle fan, Fig. 5G).

As per claim 7, Krech teaches the parameters indicate a number of the vertices that are shared between two primitives (as cited above in the case of a triangle strip, each subsequent triangle is defined by the addition of a single vertex, thus, implying two vertexes are shared with the adjacent connected primitive).

Claims 16, 20, 33, and 34-38, which are similar in scope to claims 1 and 3-7, are thus rejected under the same rationale.

Claims 22 and 23 require generation of a primitive extension represented in an ordered data stream (from left to right as in Fig. 5F) and providing the ordered data stream to a vertex engine (performed by the transform component 24).

As per claim 24, Krech teaches the generalized primitive parameters are provides through an API (col. 10, lines 62-64, col. 17, lines 30-33).

As per claim 25, Krech teaches sufficient primitives in the generalized primitive are generated to approximately cover a surface (col. 12, line 52 to col. 13, line 3, CPU communicates and/or submits a large amount of primitives to the GA chips and memory).

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As per claim 26, Krech teaches the exterior is output as a data stream comprising the data for each of the vertexes of the primitive extension (see Figs. 5A-5G).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 form.

Marshall et al. (US Patent No. 6,515,660) teach a method of adding new vertexes to a data structure for a triangle strip (Figs. 3A, 3B).

Chan et al. (US Patent No. 6,184,908) teach rendering a strip and a fan of adjacent triangles (Figs. 5 and 6).

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-2 17-9197 (toll-free).

H. Nguyen

5/11/2006



Kee M. Tung
Primary Examiner